**Claims**

What is claimed is:

1. A motorized shade system comprising:

a plurality of elongated roller tubes each having opposite end portions, the roller tubes substantially aligned along a common axis of rotation and arranged to define at least one pair of adjacently located tube end portions, each of the roller tubes adapted for winding receipt of a flexible shade fabric;

a drive system including a motor operably engaged with one of the roller tubes for rotating the roller tube about the common axis of rotation; and

a clutch mechanism for each pair of adjacently located tube end portions, the clutch mechanism including first and second clutch members received within an interior defined by a first one of the associated tube end portions, the first clutch member operably engaging the first one of the tube end portions for torque transfer therebetween,

the clutch members supported for relative movement with respect to each other between a closed clutch position in which the first and second clutch members engage each other for torque transfer therebetween and an opened clutch position in which the clutch members are separated from each other, the closed clutch position providing for simultaneous rotation of the associated tube end portions, the opened clutch position providing for relative rotation between the associated tube end portions.

2. The shade system according to claim 1, wherein each one of the first and second clutch members includes a plurality of teeth adapted for meshing engagement with the teeth of the other one of the first and second clutch members when the first and second clutch members are in the closed clutch position.

3. The shade system according to claim 1, wherein the first and second clutch members are received by a shaft, the first clutch member rotatably supported by the shaft and secured against translation thereto, the second clutch member translatable with respect to the shaft between the opened and closed clutch positions.

4. The shade system according to claim 3, wherein the first and second clutch members comprise first and second halves of face gear, each half of the face gear defining an opening receiving the shaft, and wherein each half of the face gear defines a plurality of teeth spaced circumferentially about a central axis, the teeth of each one of the face gear halves adapted for meshing engagement with the teeth of the other one of the face gear halves when the first and second clutch members are in the closed clutch position.

5. The shade system according to claim 1, wherein the clutch mechanism includes a biasing member contacting one of the clutch members to apply a biasing force to the clutch member tending to maintain the clutch members in the closed clutch position.

6. The shade system according to claim 3, wherein the clutch mechanism further includes an elongated pull rod engaging the second clutch member to provide for movement of the second clutch member from a location that is remote with respect to the second clutch member.

7. The shade system according to claim 6, wherein the shaft defines an interior and the pull rod is received within the shaft interior for translation therein, and wherein the second clutch member is secured to the pull rod by a draw pin received in aligned openings in the second clutch member and the pull rod, the draw pin extending through an elongated opening in the shaft to provide for translation of the second clutch member and the pull bar with respect to the shaft.

8. The shade system according to claim 7, wherein the shaft includes at least one access opening located at a distance from the elongated draw pin opening, the access opening aligned with an opening in the pull rod for receipt of a release tool for movement of the second clutch member.

9. The shade system according to claim 8, wherein the access opening of the shaft is located at an exterior location with respect to the interior defined by the first one of the associated pair of tube end portions.

10. The shade system according to claim 3, wherein the shaft of the clutch mechanism is oriented substantially parallel to the common axis of rotation.

11. A motorized shade system comprising:

a plurality of elongated roller tubes each having opposite end portions, the roller tubes substantially aligned along a common axis of rotation and arranged to define at least one pair of adjacently located tube end portions, each of the roller tubes adapted for winding receipt of a flexible shade fabric;

a drive system including a motor operably engaged with one of the roller tubes for rotating the roller tube about the common axis of rotation;

a pair of support assemblies for each pair of tube end portions, each support assembly of the pair of support assemblies engaging one of the tube end portions of the associated pair of tube end portions and adapted to rotatably support the tube end portion, the support assemblies of the pair of support assembly secured together to provide for simultaneous rotation of the roller tubes associated with the pair of tube end portions; and

a clutch mechanism for each pair of tube end portions, the clutch mechanism received within an interior defined by a first one of the associated tube end portions, the clutch mechanism adapted for actuation to release the roller tube associated with the first one of the associated tube end portions for relative rotation with respect to the roller tube associated with the other one of the associated tube end portions.

12. The shade system according to claim 11, wherein each of the support assemblies includes a tube-end fitting having inner and outer portions rotatable with respect to each other, the outer portion contacting an inner surface defined by the associated tube end portion, the inner portion secured to a bracket structure of the shade system.

13. The shade system according to claim 12, further comprising first and second mounting plates for each of the tube-end fittings, each of the first and second mounting plates including spaced side portions connected by a top portion, the spaced side portions of the first mounting plate translatably received by opposite notches provided in the inner portion of the associated tube-end fitting, the second mounting plate further including a bottom portion between the spaced side portions and a support panel connected to the bottom portion and oriented substantially perpendicular thereto, the support panel supporting the inner portion of the associated tube-end fitting.

14. The shade system according to claim 13, further including a vertical adjustment member for each of the tube-end portions, the vertical adjustment member including a threaded shaft portion engaging the inner portion of the associated tube-end fitting and a head portion contacting the support panel of the associated second mounting plate.

15. The shade system according to claim 13, wherein the bracket structure includes a pair of brackets each attached to the first and second mounting plates associated with one of the tube-end fittings, each bracket including at least one opening receiving a fastener, the fastener received in aligned openings in the associated first and second mounting plates, the bracket openings being elongated to provide for horizontal adjustment of the location of the associated tube-end fitting with respect to the bracket structure.

16. The shade system according to claim 11, wherein the clutch mechanism includes a first clutch member operably engaging an inner surface defined by the first one of the associated tube end portions and a second clutch member, the first and second clutch members adapted for engagement with other in a closed clutch position, the second clutch member supported for translation with respect to the first

clutch member between the closed clutch position and an opened clutch position in which the second clutch member is separated from the first clutch member.

17. The shade system according to claim 16, wherein the clutch mechanism includes a shaft receiving the first and second clutch member such that the first clutch member is rotatably supported by the shaft, the first clutch member restrained against translation with respect to the shaft, the shaft defining an interior, the clutch mechanism further including a pull rod translatably received within the interior of the shaft, the clutch mechanism further including a draw pin received in aligned draw pin openings provided in the second clutch member, the shaft and the pull rod, the draw pin openings of the shaft including a pair of oppositely located draw pin openings, the draw pin openings of the shaft being elongated longitudinally with respect to the shaft to provide for remote actuation of the clutch mechanism to move the second clutch member between the closed and opened positions.

18. An assembly for a roller shade system having multiple tubes secured together at adjacently located tube end portions to provide for simultaneous rotation of the multiple roller tubes, the assembly comprising:

a drive transfer member adapted for receipt within an interior defined by a first tube end portion of a pair of adjacently located tube end portions, the drive transfer adapted to contact an inner surface of the first tube end portion for torque transfer therewith;

first and second clutch members engageable with each other for torque transfer therebetween, the first clutch member secured to the drive transfer member for rotation therewith about an axis;

a shaft received in aligned openings in the drive transfer member and the first and second clutch members such that the drive transfer member and the first clutch member are rotatable with respect to the shaft, the first clutch member restrained against translation with respect to the shaft, the shaft defining an interior, the shaft including a coupler portion adjacent an end of the shaft adapted for

attachment to rotatable support structure for the second tube end portion of the associated pair of adjacently located tube ends;

a pull rod received within the interior of the shaft and translatable therein;

a draw pin received in aligned draw pin openings of the second clutch member, the shaft and the pull bar, the shaft and the second clutch member each including a pair of oppositely located draw pin openings, the draw pin openings of the shaft being elongated longitudinally with respect to the shaft to provide for translation of the second clutch member with respect to the shaft between closed and opened clutch positions in which the clutch members are respectively engaged with each other and separated from each other,

the pull rod and the shaft including aligned actuation openings at a location spaced from the draw pin openings, the actuation opening being elongated to provide for insertion of a tool into the actuation opening of the pull rod to move the second clutch member from the closed clutch position to the opened clutch position.

19. The assembly according to claim 18 further comprising a biasing spring having opposite ends and received by the shaft such that a first end of the biasing spring contacts the second clutch member, the assembly further including a retainer received in a recess formed in an outer surface of shaft and a washer located between the second end of the biasing spring and the retainer such that the biasing spring applies a forces to the second clutch member tending to maintain the second clutch member in the closed clutch position.

20. The assembly according to claim 18, wherein the actuator openings of the shaft are located adjacent the coupler end portion of the shaft for positioning the actuator openings at an exterior location with respect to the interior of the first tube end portion.

21. The assembly according to claim 18, wherein the first and second clutch members respectively comprise first and second halves of a face gear, each of

the face gear halves including a plurality of teeth spaced about a peripheral portion thereof, the teeth of each face gear half adapted for engagement with the teeth of the other face gear half when the second clutch member is in the closed clutch position.

22. The assembly according to claim 18, wherein the first clutch member is secured to the drive transfer member by threaded fasteners received in aligned openings of the first clutch member and the drive transfer member and engaging a bracket retainer.

23. The assembly according to claim 18, wherein the first clutch member is restrained against translating with respect to the shaft by a pair of retainers located on opposite sides of the first clutch member and received in recesses formed in the shaft, the assembly further including a washer between each of the opposite sides of the first clutch member and the associated retainer.

24. A system for coupling a pair of roller tubes of a multiple-tube roller shade system having adjacently located ends, the system comprising:

first and second tube-end fittings adapted for receipt within adjacently located ends of a pair of roller tubes, each tube-end fitting comprising inner and outer portions that are rotatable with respect to each other, the outer portion adapted to contact an inner surface defined by the associated roller tube of the pair of roller tubes, the inner portion adapted for engagement with support structure for rotatably supporting of the associated tube;

first and second shafts each having a coupler end portion and an opposite tube-engagement end portion, each of the first and second shafts received by the respective tube-end fitting such that the respective tube-end fitting is located between the coupler end portion and the tube-engagement end portion of the associated shaft,

the coupler end portion of the first shaft comprising a curved wall portion substantially defining a partial cylinder, the curved wall portion having side edges forming an access opening to an interior of the curved wall portion, the coupler

end portion of the second shaft defining a closed cross-section received within the interior of the coupler end portion of the first shaft;

a shaft connector received in aligned openings in the coupler end portions of the first and second shafts to releasably secure the first and second shafts to each other; and

first and second drive transfer members secured to the tube-engagement end portions of the respective shafts, each of the first and second drive transfer members adapted to contact the inner surface of the associated roller tube of the pair of roller tubes for torque transfer therebetween.

25. The coupling system according to claim 24, wherein the cross-section comprises a tube including opposite faceted portions defining substantially planar outer surfaces and curved wall portions located between the faceted portions.

26. The coupling system according to claim 24, wherein the shaft connector is a cotter pin.

27. The coupling system according to claim 24 further comprising a mounting plate for each of the tube-end fittings adapted for attachment to support structure, the mounting plate received in notches defined by the inner portion of the associated tube-end fitting.

28. The coupling system according to claim 27 further comprising a second mounting plate for each of the tube-end fittings arranged in a stacked manner, each of the first and second mounting plates including spaced side portions and a top portion interconnecting the spaced side portions,

the spaced side portions of the first mounting plate received in opposite notches defined by the inner portion of the associated tube-end fitting and translatable thereto,

the second mounting plate further including a bottom portion interconnecting the side portions and a support panel connected to the bottom portion

and oriented substantially perpendicular thereto for supporting the associated tube-end fitting.

29. The coupling system according to claim 28 further including a vertical adjustment member for each of the tube-end fittings, the vertical adjustment member including a threaded shaft engaging the inner portion of the associated tube-end fitting and a head portion contacting the support panel of the second mounting plate.

30. The coupling system according to claim 29 further including first and second brackets for respectively supporting the first and second tube-end fittings, the mounting plates secured to the brackets by fasteners received in aligned openings in the mounting plates and the brackets and wherein the openings in the brackets are elongated to provide for horizontal adjustment of the associated tube-end fitting.